

ATOMIC ENERGY *newsletter*®

A SERVICE FOR INDUSTRY BUSINESS ENGINEERING AND RESEARCH
ROBERT M. SHERMAN, EDITOR. PUBLISHED BI-WEEKLY BY ATOMIC ENERGY NEWS CO., 1000 SIXTH AVENUE, NEW YORK 18, N. Y.

Dear Sir:

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Under contract recently awarded Leeds & Northrup Co., Philadelphia, by State University of New York, a nuclear reactor simulator will be furnished New York's Maritime College. The Maritime College, which has been teaching courses in nuclear physics for the past eight years, is the first school of its type to install a nuclear reactor simulator, which duplicates in a relatively inexpensive manner the operational characteristics of a nuclear reactor. The College's action is seen as an indication of a growing concern within the maritime industry of the applications of atomic energy. (Others using the L&N training devices are Virginia Polytechnic Institute; Catholic University; Georgia Tech; Universities of Pennsylvania, Delaware, and Puerto Rico; Israel Institute of Technology; and the Atomic Energy Commission of Pakistan.) (Other CONTRACT NEWS, p. 2 this LETTER.)

Atomic Laboratories, Berkeley, Calif., has now been acquired by Cenco Instruments. The transaction involved stock rather than a cash consideration. The Atomic organization will be kept intact by Cenco, and will be operated as a subsidiary. (Other FINANCIAL NEWS, p. 5 this LETTER.)

The annual Summer program in Nuclear Technology for Industry of the University of California, Berkeley, will include Nuclear Technology Study Program (June 22-Aug. 28); Radiological Regulation and Use (July 20-July 31); and Nuclear Technology Survey (July 13-17). Full information may be obtained from the University's engineering and sciences extension, 2441 Bancroft Way, Berkeley, Calif. (Other MEETINGS, COURSES, CONFERENCES, p. 2 this LETTER.)

Thiolated gelatin, developed by Schwarz Laboratories, Inc., 230 Washington St., Mt. Vernon, N.Y., is offered by that firm as a protective agent against radiation, among its other uses. The first of this firm's series of thiolated proteins, the Thiogel-20, as it is trade-named, has the ability to form a gel rapidly without the necessity of chilling. (Other PRODUCT NEWS, p. 3 this LETTER.)

Nuclear equipment business in the U.S. in 1957 showed gross sales of about \$100 million according to reports of 200 firms jointly surveyed by Bureau of Census, Department of Commerce, and the USAEC. Shipments of radiation detection and monitoring devices amounted to more than \$16 million and shipments of reactor vessels and tanks totaled more than \$10 million. Accessory instrumentation for reactor control totaled \$9.5 million; complete fuel elements, \$8.6 million; valves, pumps and heat exchangers specifically designed for nuclear uses, \$7.8, \$6.1, and \$8.3 million respectively; control and measuring devices containing isotopes, \$6.0 million; assembled reactors, \$5.7 million; and other specialized reactor components, \$4.5 million. Other categories covered in the survey (now in preliminary form, and to be available shortly in full detail) were hot laboratory equipment; partially completed fuel elements; natural and enriched uranium metal and compounds; and reactor control rod drive mechanisms. (Other BUSINESS NEWS, p. 5 this LETTER.)

BIDS ASKED, CONTRACTS AWARDED...in the nuclear field...

BIDS ASKED:- Bids for construction of an equipment decontamination building at Hanford Works have been asked by the USAEC's Hanford operations office, Richland, Wash. Bid deadline date is April 15.

CONTRACTS BEING NEGOTIATED:- Under the USAEC's fuel cycle development program, the Commission has selected 24 research and development proposals from some 18 firms as the basis for contract negotiations. The contracts are to run from one to three years, with total cost to the Commission placed at \$25 million. Proposals were selected from 111 received from 39 firms in response to USAEC invitation issued last October concerning means of improving the fuel cycle for nuclear power reactors. Four proposals have been accepted from Combustion Engineering, Inc., Windsor, Conn.; and two each from Nuclear Development Corp. of America, White Plains, N.Y. Battelle Memorial Institute, Columbus, Ohio, and Olin-Mathieson Chemical Corp., New Haven, Conn. Firms submitting one acceptable proposal include ACF Industries, Inc., Washington, D.C.; American-Standard Co., Mountain View, Calif.; Babcock & Wilcox Co., New York, N.Y.; Carborundum Co., Niagara Falls, N.Y.; Clevite Corp., Cleveland, Ohio; Denver Research Institute (University of Denver), Colo.; Electro Metallurgical Co., and National Carbon Co., both divisions of Union Carbide Corp.; General Electric Co., San Jose, Calif.; Nuclear Materials & Equipment Corp., Apollo, Pa.; Nuclear Metals, Inc., Concord, Mass.; Sanderson & Porter, New York, N.Y.; Technical Research Group, Syosset, New York; Westinghouse Electric Corp., Pittsburgh, Pa.

CONTRACTS AWARDED:- Contract has been awarded by USAEC to Vitro Corp., New York, to provide architect-engineer services for a portion of the new pilot plant to be erected at Oak Ridge National Laboratory to chemically reprocess radioactive nuclear power plant fuels. Chemical processes for the system to be used will be developed and designed by Laboratory staff at Oak Ridge, who will also furnish design criteria. Total cost of the project will be some \$3,500,000 including design, construction and modification, and equipment fabrication and installation. The new pilot plant complex will combine three existing chemical pilot plants with new facilities. Presently, the thorex pilot plant, metal recovery plant, and fission products pilot plant are interconnected to permit reprocessing of a variety of irradiated fuels containing uranium, thorium and plutonium in various combinations. The new facilities will allow for processing of fuels clad with stainless steel, zirconium, and other corrosion-resistant materials. It will provide also for underwater storage of spent fuels as well as facilities for processing alloy or oxide fuels.

Giffels & Vallet, Inc., Detroit, have received USAEC contract to furnish architect-engineer services for new metals and ceramics building to be constructed at Oak Ridge National Laboratory; estimated cost of the project is \$6,500,000. Work in the building will be on research into metallurgical problems associated with nuclear reactor development. With working space for more than 200 people, the facility will consolidate Oak Ridge National Laboratory's metallurgical research and development groups.

Contract has been awarded by the Air Force to Convair division of General Dynamics Corp., to work with the nuclear propulsion division of General Electric Co., in the initial design of a nuclear-powered bomber prototype. Most of the current work on the aircraft nuclear propulsion program is concentrated on the development of the propulsion system, as will be the case in the immediate future. From this point on, however, a single airplane company (Convair) will work directly with the propulsion contractor (GE) in carrying out the design. (Since the inception in 1946 of the Air Force's nuclear aircraft program, some \$750 million have been appropriated for the project, jointly administered by the USAEC and the Air Force.)

MEETINGS, COURSES, CONFERENCES...

MEETINGS:- Unclassified technical information meeting on the construction, operation, and use of test reactors will be held May 13-15, 1959 at the National Reactor Testing Station, Idaho Falls, Idaho. USAEC and its contractor, Phillips Petroleum Co., are sponsoring the meeting.

Annual meeting April 27-29, 1959 in Los Angeles of Aero Medical Association will hear papers on "Radiobiological Risk Factors Involved in Future Nuclear Powered Space Vehicles", "Radiation Dosage in Flight Through the Radiation Belt", among other space travel discussions. Program, and further details may be obtained from T. H. Sutherland, M.D., Box 26, Marion, Ohio, secretary of the organization.

NEW PRODUCTS, PROCESSES, INSTRUMENTS...for nuclear lab & plant...

NEW PRODUCTS FROM MANUFACTURERS:- Portable spectrometer, Model 50-8, is a lightweight unit which may be used for alpha, beta, gamma or neutron detection by a direct interchange of detecting crystals. The unit includes a $1\frac{1}{2}$ "x2" crystal; photomultiplier tube; amplifier tube; amplifier; pulse height analyzer; count rate meter and pulse generator; as well as the necessary batteries. Spectrometer measures approximately 17"x5"x12", weighs 14-lbs.--Radiation Instrument Development Laboratory, Inc., 5737 So. Halstead St., Chicago 21, Ill.

Compact nuclear "building-block" control modules are said to be so flexible that they can be grouped readily into "customized" systems to meet the individual requirements of any type of nuclear reactor or operating need. These plug-in units are supplied in four basic control channels: (1) pulse channels, to measure the rise of neutron flux from source levels to the intermediate power ranges; (2) log N or intermediate channels, to monitor and control rate of change of flux levels to full power; (3) linear-servo channels, to change power levels smoothly from one to another; (4) safety channels, with load-sharing features which eliminate problems of false scrams but still provide protection.--Leeds & Northrup Co., Philadelphia 44, Pa.

PRODUCT NEWS:- Two Ramo-Wooldridge RW-300 digital control computers will be used to monitor the radioactivity of carbon dioxide used as cooling gas in France's Chinon nuclear power plant. The computers are standard models, which Ramo-Wooldridge, division of Thompson-Ramo-Wooldridge Inc., Los Angeles developed. One computer was built by Ramo-Wooldridge; the other by Intertechnique, a French electronics and instrumentation company (subsidiary of General Aeronautique Marcel Dassault) which has the prime contract for the computing data-logging system which incorporates the two RW-300 computers. In use, the computers will continuously scan electronic binary counters connected directly to radiation detectors in the cooling channels. With the data obtained, the computers will calculate change in radioactivity of the cooling gas in each group of channels, logging and checking it against an upper limit, and activating an alarm signal if the figures exceed a preset limit. (The Chinon plant, which will have a rated output of 300 megawatts of heat and 80 megawatts of electricity, is being built by Electricite de France, power utility of the French Government.)

Isotope containers designed to hold activities commonly used in gamma radiography are now being offered in various versions by R. F. Fraser-Smith, 69 Kings Cross Road, London W.C.1, England. The standard container, for iridium-192 or cesium-137, weighing about 30-lbs., has been designed to give maximum radiation level of 7.5 mr/hr at the surface when holding $2\frac{1}{2}$ curies of iridium-192. Another container, weighing $8\frac{1}{2}$ -lbs., is for thulium-170. To be available shortly is a third model, for cobalt-60, which will weigh about 70-lbs. and which will give a radiation level of 7.5 mr/hr at one meter distance when holding 2 curies.

A single organization for producing and marketing radioactive isotopes has been set up by the U. K. Atomic Energy Authority at the Radiochemical Centre, Amersham. Headquarters and principal laboratories will be at Amersham; irradiation facilities of Harwell and other Authority sites will be used. (Previously, production and marketing had been shared between the Radiochemical Centre and the isotope division of the Atomic Energy Research Establishment, Harwell.) The reorganization is an effort on the Authority's part to improve its service to users, in view of the increase in demand for isotopes which it says it is now experiencing.

New process sequential sampler of Gelman Instrument Co., Chelsea, Michigan, automatically collects twelve dust samples in sequence on 2-inch filter disks. Filters used may be glass fiber, cellulose, porous plastic membrane, or asbestos. When particles having weak alpha and beta emission are being determined, cellulose-ester filters are recommended by the manufacturer since the particles are collected on the filter surface and little self absorption takes place.

MANUFACTURERS' LITERATURE:- New 28-page catalog (No. B-9) of nuclear accessories and related instrumentation is available on request from Atomic Accessories, Inc., 244-02 Jamaica Ave., Bellerose 26, N.Y..... Four page bulletin describing facilities, services and potential applications of its new irradiation center may be obtained from Radiation Dynamics, Inc., Westbury, L.I., New York.....New bulletin of Victoreen Instrument Co., 5806 Hough Ave., Cleveland 3, Ohio, describes that firm's line of portable radiation survey meters.....Design, engineering and construction of a $1\frac{1}{2}$ million-lb.-per year zirconium plant built for Columbia-National by Badger Manufacturing Co. is described in booklet available from Badger at 230 Bent St., Cambridge 14, Mass.

ATOMIC ENERGY PATENT & TRADE-MARK DIGEST...

ISSUED March 17, 1959 to PRIVATE ORGANIZATIONS AND/OR INDIVIDUALS:- (1)

Cassette. Halsey L. Raffman, inventor. No. 2,878,389 issued to inventor of record. (2) (3) Uranium detecting devices. Francis K. Campbell, inventor. Nos. 2,878,390; 2,878,391. One-half interests assigned to inventor of record; one-half interests assigned to The Moran Corp., Houston, Texas.

ISSUED March 17, 1959 to GOVERNMENTAL ORGANIZATIONS:- (1) Formation of uranium precipitates. John M. Googin, Jr., inventor. No. 2,878,100 assigned to USAEC. (2) Method for recovery of iron sulfate. David H. Reeve, inventor. No. 2,878,101 assigned to USAEC. (3) Precision time-delay circuit. Robert Creveling, inventor. No. 2,878,382 assigned to USAEC. (4) Beam control probe. Alfred W. Chesterman, inventor. No. 2,878,387 assigned to USAEC. (5) High voltage generator. Arnold J. Schwemin, inventor. No. 2,878,401 assigned to USAEC.

ISSUED March 24, 1959 to PRIVATE ORGANIZATIONS AND/OR INDIVIDUALS:- (1) Process for blanching zirconium. W. Fischer, inventor. No. 2,879,186 assigned to Aktiengesellschaft fur Unternehmungen A.G., Essen, Germany. (2) Detection of radiation. Allen D. Garrison, inventor. No. 2,879,398 assigned to Texaco Development Corp., New York, N.Y. (3) Radiation thickness gauge. Herbert Friedman, inventor. No. 2,879,399 assigned to J. J. Maguire, Washington, D. C. (4) Loaded dielectric x-ray detector. Robert J. Schneeberger, inventor. No. 2,879,400 assigned to Westinghouse Electric Corp., E. Pittsburgh, Pa. (5) Directional neutron detector. Maurice C. Ferre, inventor. No. 2,879,402 assigned to Schlumberger Well Surveying Corp., Houston, Tex. (6) System for radioactive logging. Edward E. Rankin, Jr., inventor. No. 2,879,403 assigned to Wellex, Inc. (7) Counter. Robert T. Bayard, inventor. No. 2,879,423 assigned to Westinghouse Electric Corp., E. Pittsburgh, Pa.

ISSUED March 24, 1959 to GOVERNMENTAL ORGANIZATIONS:- (1) Process for recovering uranium. George E. Macwood, inventor. No. 2,879,130 assigned to USAEC. (2) Pumps. John D. Thornton, inventor. No. 2,879,144 assigned to USAEC. (3) Nuclear reactor. H. Hurwitz, Jr., H. Brooks, C. Mannal, J. H. Payne, E. A. Luebke, inventors. No. 2,879,216 assigned to USAEC. (4) Process for purifying crude perfluorocarbons. Robert E. Holston, inventor. No. 2,879,228 assigned to USAEC. (5) Molded sealing element. Bernard W. Bradford, inventor. No. 2,879,247 assigned to USAEC.

TRADE-MARK NEWS:- Mark "Atomlight" is to be registered by trade-mark division, U.S. Patent Office, for New England Nuclear Corp., Boston, Mass., covering radio-activated light-giving elements (SN-50,927)..... Mark "Isotron" will be registered for Frontier Perforators, Inc., Pampa, Tex., for radioactivity, well logging or surveying (SN-46,615)..... Mark "Cobatope" is to be registered for Olin Mathieson Chemical Corp., New York, N.Y., for pharmaceutical preparations containing radioactive cobalt (SN-56,575).

PATENT NEWS:- New group of 102 patented inventions developed with USAEC financing has been made available for royalty-free (non-exclusive) use by industrial concerns. Inventions are those for which patents were issued in the last quarter of 1958, and have been listed in this NEWSLETTER. Further information on this new group, or on the 1,069 inventions made available previously by the USAEC for such use, may be obtained from USAEC, General Counsel, Washington 25, D. C.

Supreme Court decision last fortnight continued in effect a lower district court's order enjoining the USAEC from making disclosure of heavy-water process invented by Jerome Spevack. Issue of the patent is expected shortly. (Extensive litigation has marked this case which involves effort of Mr. Spevack to prevent disclosure by USAEC of his heavy-water process and thus, he has claimed, prejudice his ability to obtain foreign patent protection on his method.)

PEOPLE...in nuclear energy work...

Edward Diamond will join Stromberg-Carlson division of General Dynamics Corp., Rochester, N.Y., in early April as secretary and general counsel, leaving the USAEC. Mr. Diamond has been with the USAEC and its predecessors since World War II and since February 1958 has been associate general counsel of the Commission. He is an authority on third party liability in relation to research and industrial atomic energy work.

Oliver Townsend has been named first director of atomic development of New York state by Governor Rockefeller. For the past five years Mr. Townsend has been secretary and assistant executive manager of Atomic Industrial Forum, New York.

ATOMIC ENERGY BUSINESS & FINANCIAL NEWS...

EARLY U.S. DECISION ON URANIUM OPTIONS URGED BY CANADIAN PRODUCERS:- An early decision by the USAEC regarding options it holds on Canadian uranium production is being urged by officials of Eldorado Mining & Refining, Ltd., in an effort to stabilize Canada's uranium mining industry, Gordon Churchill, minister of trade and commerce, told the House of Commons in Ottawa recently. Eldorado wants the options taken up in the next few months, he noted. The options are in agreements made with the USAEC by Eldorado (which handles sales for the Canadian government of uranium concentrates) covering Canadian uranium sales to the U. S. for the period from 1955 to Mar. 31, 1962, and in the case of some mines to Mar. 31, 1963. The agreements give U.S. an option to buy output of Canadian mines in question during the period between completion of deliveries under the present contracts and Dec. 31, 1966. Deadline for exercise of the options is Mar. 31, 1961. With increased domestic U. S. uranium output, and pressure of U.S. producers on the USAEC, Canadian producers feel that markets other than the U. S. may need to be explored in the future, if the option question is not immediately resolved in their favor.

INDUSTRIAL FIRM IN NUCLEAR FIELD REPORTS LOWERED OPERATING NET INCOME:- Vitro Corp. of America has reported a decline in its operating net income for 1958 although its revenues were \$65,476,477, an increase of about 3% from the \$63,137,120 reported for 1957. A special charge for 1958 gave the company an overall net loss of \$1,497,863 for the year. This covered revaluation of Vitro's investment in a subsidiary, Heavy Minerals Co. Before this charge the company had net income after taxes of \$500,293 or 42¢ a share, down from \$1,514,517 or \$1.42 a share reported for 1957. (The revaluation of Heavy Minerals followed an increase in Vitro's ownership of the company, when it acquired Crane Co.'s stock in Heavy Minerals and thus obtained 87.5% ownership against its old holdings of 40%. Balance of Heavy Minerals stock is owned by the Pechiney group, of France. The special charge reduced the carrying amount of Vitro's investment in Heavy Minerals to an amount equal to its equity in the net assets of the subsidiary at Dec. 31, 1958 or \$1,476,000. Vitro had acquired Crane's stock in return for assuming Crane's guarantee of a \$1 million bank loan to the subsidiary, and in addition had guaranteed a \$1 million short term bank loan for Heavy Minerals.) Assets of Vitro Uranium Co., mining and milling subsidiary, were also transferred to Heavy Minerals Co. on March 1. The combined operations are expected to be profitable, according to J. Carlton Ward, president of Vitro.

MINING FIRM EXPECTS URANIUM REVENUES TO HELP CURRENT SHOWING:- Uranium activities of Homestake Mining Co. will give the firm a better net for 1959 than the \$4,110,556 or \$2.05 a share the company earned in 1958, according to Donald H. McLaughlin, Homestake president. The San Francisco-based gold and uranium mining company reported total 1958 revenues of \$23,875,259, an increase from \$21,785,035 of the previous year. About 85% of the company's earnings last year came from operations of its gold mine at Lead, S. D., and most of the remainder from uranium operations. Gold production for 1958 was valued at \$19,611,351 and income from uranium was \$1,577,234.

LOWER NET LOSS SHOWN BY NUCLEAR INSTRUMENT MANUFACTURER:- Net loss for 1958 of \$258,000 on sales of \$10,300,000 has been reported by Tracerlab, Inc., Waltham, Mass., nuclear instrument manufacturer. This compares with net loss for 1957 of \$1,400,000 on sales of \$12,000,000. Expressing optimism for the future, S. S. Auchincloss, president, noted that the firm was expanding its sales force 50% by adding seven new salesmen, two of whom will open new branch offices, one in Atlanta, Ga., and the other in Columbus, Ohio. The 1958 loss might have been less, he pointed out, but the company undertook a stepped up development program in the latter part of 1958. He noted that since early in 1957, the firm has sold only those products on which it could make a profit, and this decreased the 1958 gross. Some twenty-five new nuclear products are expected to add substantially to 1959 sales, as well as are the new products of the firm's Keleket X-Ray division which were introduced during late 1958, according to Mr. Auchincloss.

COMPANY NOTES:- Universal Winding, whose Patterson-Moos division works in the nuclear and allied fields, was admitted to dealings on the American Stock Exchange yesterday (March 30). It had been traded over the counter.

Sincerely,

The Staff
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March 31, 1959